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ELECTRONICS

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Jameco Part Number 802409

FEATURES AND SPECIFICATIONS

Features and Benefits

- Meets SCA-2 Enhanced Single Connector Attach specifications for small form factor disk drives
- Metal retention clips for mechanical hold down before and after processing
- Blind-mate guide ears on ends with integral ESD grounding contacts
- Staggered "hot plug" first-mate/last-break contacts
- Mates to standard .062" PC board card edge with low insertion force
- Surface Mount Compatible

Reference Information

Product Specification: PS-73826-0000

Packaging: Tray

UL File No.: E29179

CSA File No.: LR19980-239A

Mates With: [87012](#), [87571](#) and [87572](#)

Designed In: Inches

Electrical

Voltage: 30V

Current: 1.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage: 500V AC

Insulation Resistance: 1000 MΩ min.

Mechanical

Contact Retention to Housing: 500g min.

Mating Force: 90g max.

Unmating Force: 15g min.

Normal Force: 90g

Durability: 500 cycles min.

Physical

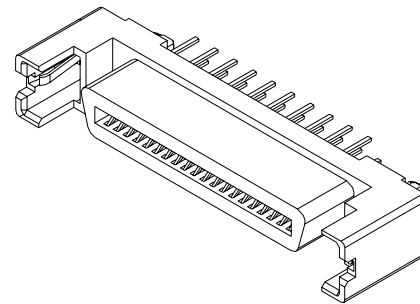
Housing: High-temperature thermoplastic, UL 94V-0

Retention Clip: Copper Alloy

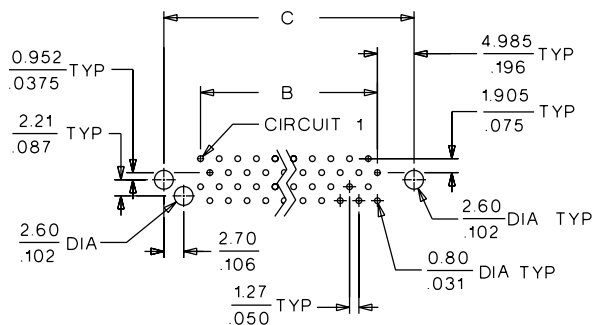
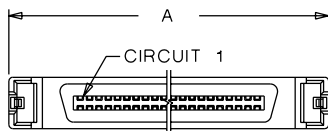
Contact: Copper Alloy

Plating: 30μ" min. Gold over Nickel in contact area,
100μ" min. Tin/Lead over Nickel on tails

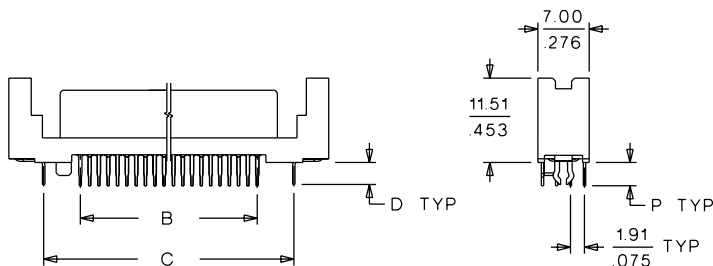
Operating Temperature: -40 to +105°C


1.27mm (.050") Pitch
EBBI™ 50D
Receptacle
71743**Vertical**
SCA-2

CATALOG DRAWING (FOR REFERENCE ONLY)



PCB LAYOUT: COMPONENT SIDE



ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.	Dimension				
		A	B	C	D	P
40	• 71743-1040	43.60 (1.717)	24.13 (.950)	34.11 (1.343)	3.00 (.118)	3.18 (.125)
	• 71743-1041	43.60 (1.717)	24.13 (.950)	34.11 (1.343)	3.00 (.118)	2.79 (.110)
	• 71743-1042	43.60 (1.717)	24.13 (.950)	34.11 (1.343)	2.24 (.088)	1.78 (.070)
	• 71743-1044	43.60 (1.717)	24.13 (.950)	34.11 (1.343)	3.00 (.118)	3.40 (.134)
	• 71743-1045	43.60 (1.717)	24.13 (.950)	34.11 (1.343)	3.00 (.118)	3.75 (.148)
80	• 71743-1080	69.00 (2.717)	49.53 (1.950)	59.51 (2.343)	3.00 (.118)	3.18 (.125)
	• 71743-1081	69.00 (2.717)	49.53 (1.950)	59.51 (2.343)	3.00 (.118)	2.79 (.110)
	• 71743-1082	69.00 (2.717)	49.53 (1.950)	59.51 (2.343)	2.24 (.088)	1.78 (.070)
	• 71743-1084	69.00 (2.717)	49.53 (1.950)	59.51 (2.343)	3.00 (.118)	3.40 (.134)
	• 71743-1085	69.00 (2.717)	49.53 (1.950)	59.51 (2.343)	3.00 (.118)	3.75 (.148)
	• 71743-1086	69.00 (2.717)	49.53 (1.950)	59.51 (2.343)	4.37 (.172)	3.18 (.125)

• US Standard Product, available through Molex franchised distributors



PRODUCT SPECIFICATION



LANGUAGE

ENGLISH

1.0 SCOPE:

This specification covers the characteristics, performance, and test requirements of the Molex family of SCA-2 receptacle connectors. This system has been designed to meet the specific requirements of the Small Form Factor (SFF) committee as described in the appropriate Electronics Industry Association (EIA) documents, both dimensionally and from a performance perspective. These connectors are intermateable with other interfaces that comply to the same specification.

2.0 PRODUCT DESCRIPTION:

2.1 CONNECTORS COVERED IN THIS SPECIFICATION:

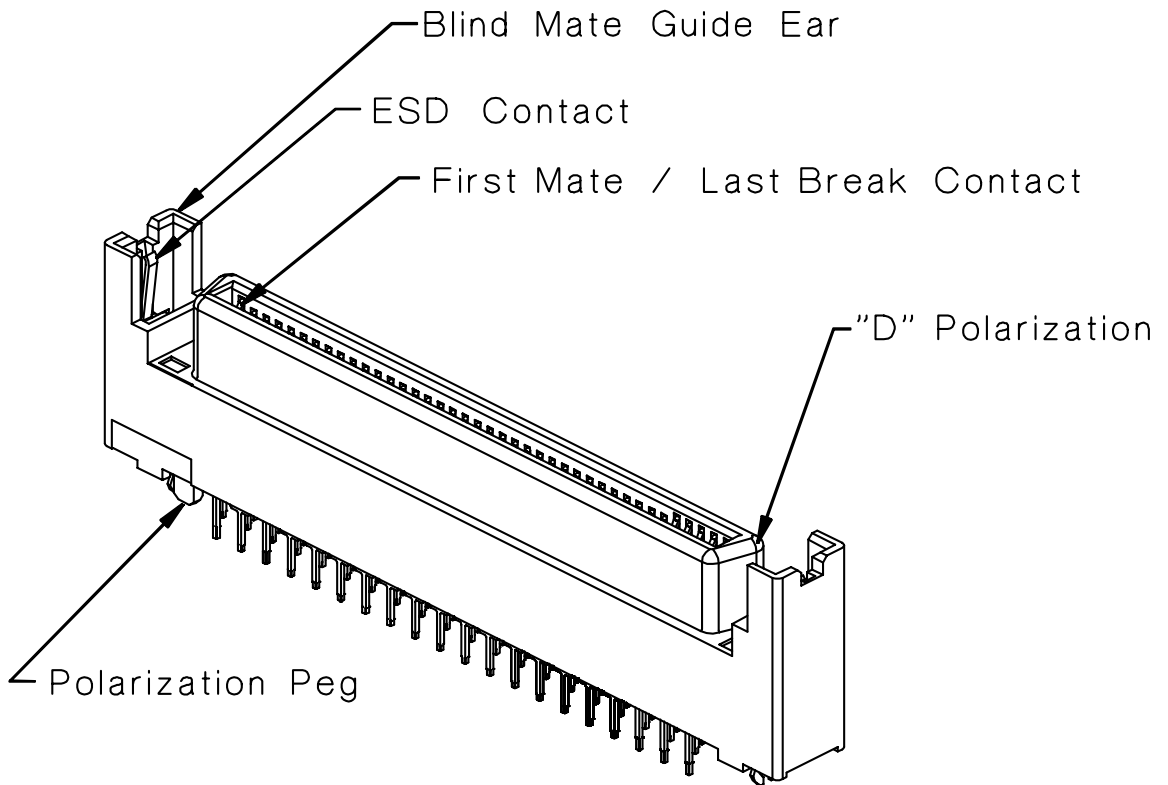
<u>Description</u>	<u>Sales Drawing</u>	
<u>Ckt. Size</u>		
SCA-2 Standard Height Through-Hole Receptacle	SDA-71743-104*	40
	SDA-71743-108*	80
SCA-2 Extended Height Through-Hole Receptacle	SD-71744-001	40 & 80
SCA-2 Standard Height Through-Hole Recpt. w/dual pegs	SD-73718-001	80
SCA-2 Standard Height Compliant Pin Receptade	SD-73826-001	40 & 80
SCA-2 Extended Height Compliant Pin Receptade	SD-73829-001	40 & 80
SCA-2 Adapter	SD-74185-999	40 & 80
GBIC Right Angle Through-Hole Receptacle	SD-74065-001	20
Dual Stack GBIC Right Angle Through-Hole Receptacle	SD-74432-003	20 (Upper) 20 (Lower)

REVISE ON PC ONLY		TITLE	
E	SEE SHEET 1	PRODUCT SPECIFICATION FOR MOLEX SCA-2 CONNECTOR GROUP	
REV. DESCRIPTION		THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	
DOCUMENT NUMBER PS-73826-0000		DIMENSION CLASS: CRITICAL = 0 MAJOR = 0	FILENAME SHEET SCA2PS 2
ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP			



2.2 GENERAL SERIES INFORMATION

The SCA-2 connector group is based on the Molex EBBI™ 50D product family, with select gold, dual-row cantilever contacts on .050” centerline spacing in a polarized “D” shaped housing. SCA-2 (Enhanced Single Connector Attach) is an industry standard featuring blind-mating guide ears, integral ESD grounding contacts, and sequential first - mate / last - break contacts for hot plugging storage devices to disk arrays and backplanes.

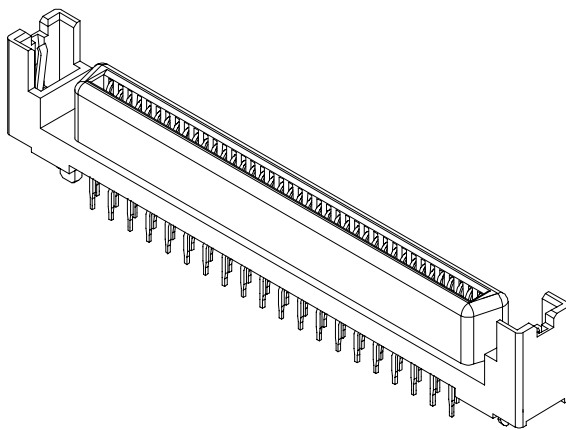


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DOCUMENT NUMBER PS-73826-0000		DIMENSION CLASS: CRITICAL = 0 MAJOR = 0	FILENAME SCA2PS	SHEET 3
ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP				

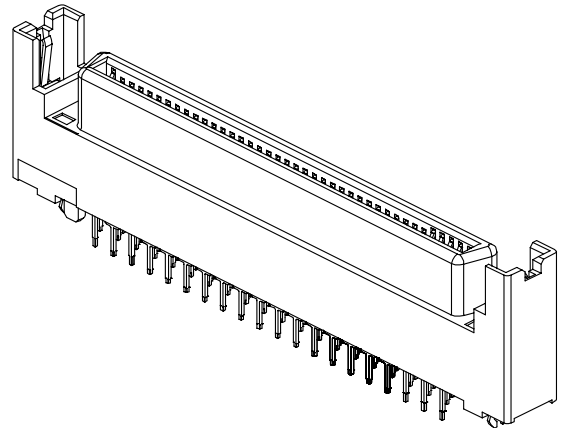


2.3 SERIES 71743, 71744 and 73718 - THROUGH HOLE SCA-2 RECEPTACLES:

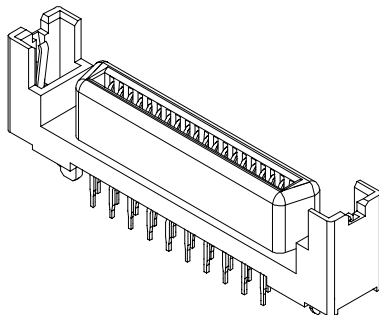
The SCA-2 Through Hole Receptacles are available standard and extended height. This family offers a variety of tail lengths, and is also available with or without polarization pegs. The high temperature polymer housing is I.R. reflow compatible, allowing the product to be attached by wave solder or pin - in - paste methods.



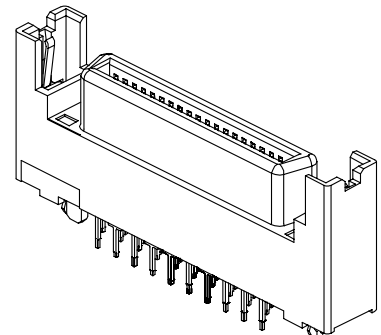
71743-108*



71744-108*



71743-104*



71744-104*

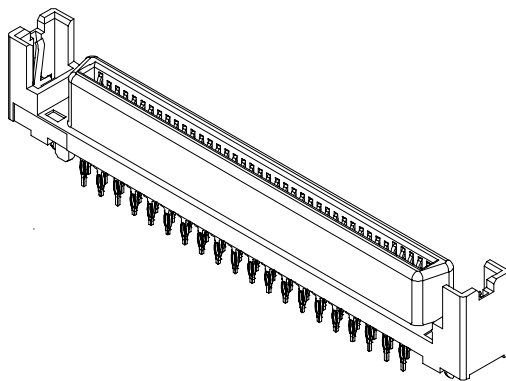
* Other options available under series 73718

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REV.	DESCRIPTION		
DOCUMENT NUMBER	DIMENSION CLASS:		FILENAME
PS-73826-0000	CRITICAL = 0	MAJOR = 0	SCA2PS
	ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP		SHEET
			4

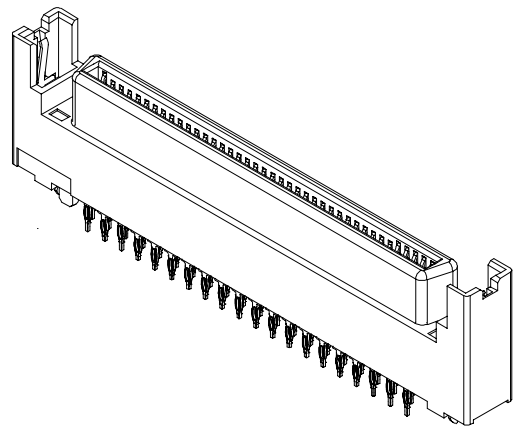


I. 2.4 SERIES 73826, 73829 - COMPLIANT PIN SCA-2 RECEPTACLES:

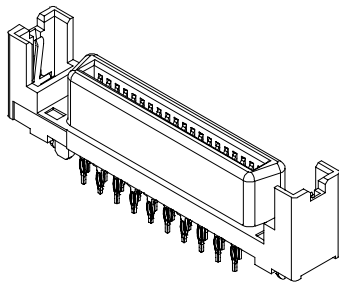
The SCA-2 Compliant Receptacles are available in both Standard and Extended Height options. The compliant tail is an "eye of the needle" design. The housings are molded of a high temperature polymer that is R. reflow compatible, allowing the connectors to be pressed on before or after the board has been processed. These connectors are intended for thicker backplanes (.093"/2.44mm) PCB's and will help reduce processing complications and costs. Application tooling for this product, 62100-series, is available upon request; consult with your Molex representative for details.



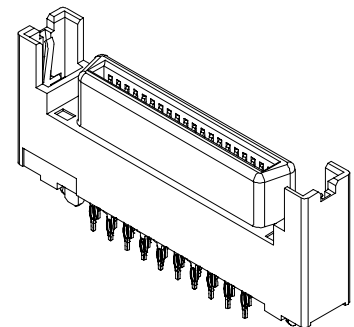
73826-0001



73829-0001



73826-0002



73829-000 2

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DOCUMENT NUMBER PS-73826-0000			DIMENSION CLASS: CRITICAL = 0 MAJOR = 0	FILENAME SCA2PS	SHEET 5
ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP					

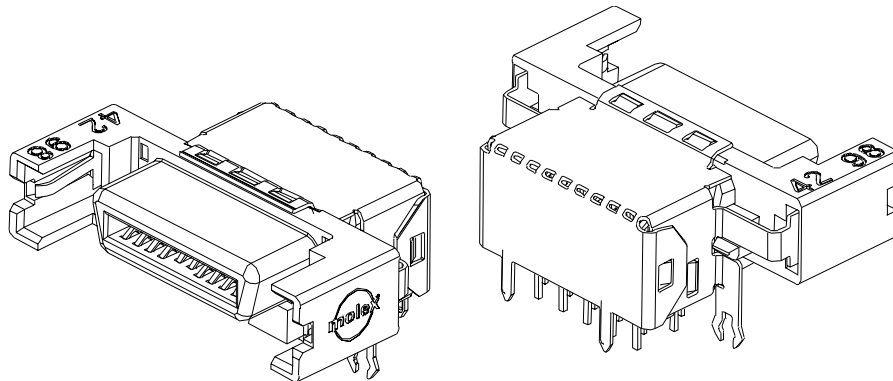


2.5 SERIES 74185, SCA-2 ADAPTER:

The SCA-2 Adapter is a connector made up of a plug SCA-2 interface on one side and receptacle on the other. This is an inter-connect device used primarily in servers or storage devices to bridge the disk drives to the back plane. This connector is custom and customer specific for each application.

2.6 SERIES 74065, - GBIC RIGHT ANGLE RECEPTACLE:

The GBIC Right Angle Shielded Receptacle is a high speed interface designed to meet the Small Form Factor Giga-Bit Interface Converter specification. This SCA-2 interface can be intermated with a variety of industry standard GBIC transceiver modules. The shielding improves the EMI performance and allows the connector to operate at higher speeds.



74065-000*

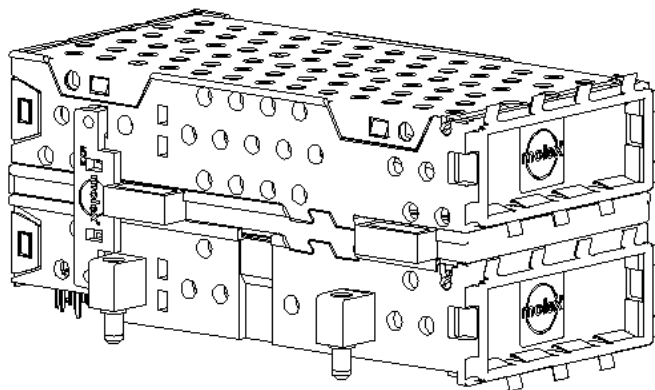
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ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP					



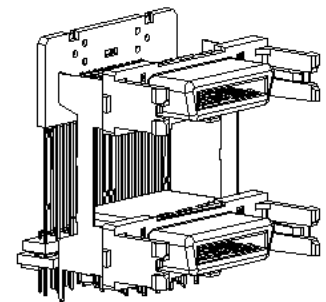
2.7 SERIES 74432: DUAL STACK GBIC RIGHT ANGLE THROUGH-HOLE

RECEPTACLE

The Dual Stack GBIC Right Angle Shielded Receptacle is a high speed interface designed to meet the Small Form Factor Giga-Bit Interface Converter specification. This one-piece unit allows the user to double the port density in the same amount of board space. Improved EMI shielding is provided with EMI gaskets, EMI doors and EMI covers. This SCA-2 interface can be intermated with a variety of industry standard GBIC transceiver modules. The Dual Stack GBIC is available in tray packaging.



DUAL STACK GBIC



DUAL STACK GBIC
(SHIELDING REMOVED)

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DOCUMENT NUMBER PS-73826-0000		DIMENSION CLASS: CRITICAL = 0 MAJOR = 0	FILENAME SCA2PS	SHEET 7
ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP				





2.8 ADVANTAGES:

The Molex SCA-2 family of products offers several design advantages over the competition. One key advantage is a robust contact design that offers increased wipe length, giving users more tolerance when designing their systems. All versions except the standard height through-hole, utilize a pre-loaded contact design. This decreases the opportunity for stubbing and contact misalignment, lowers mating forces, and reduces the variability of the contact gap. The connectors can be used on a variety of boards and applications in addition to disk drive and transceiver device attachment.

3.0 AGENCY APPROVALS:

3.1 UNDERWRITERS LABORATORIES: E29179

3.2 CANADIAN STANDARDS ASSOCIATION: LR19980-239A.

	REVISE ON PC ONLY		TITLE PRODUCT SPECIFICATION FOR MOLEX SCA-2 CONNECTOR GROUP
	E	SEE SHEET 1	
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DOCUMENT NUMBER PS-73826-0000			DIMENSION CLASS:  CRITICAL = 0  MAJOR = 0
		FILENAME SCA2PS	SHEET 8
ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP			



4.0 MECHANICAL SPECIFICATIONS:

4.1 MATERIALS:

4.1.1 Housings:

All housings and tailaligners are molded out of high temperature I.R. compatible polymers. The exception to this is the Adapter bracket. All polymers used are 94V-0.

4.1.2 Stamped Components:

All contacts are stamped from high strength copper alloys that have excellent electrical properties.

4.1.3 Plating:

- .000030" (0.00076mm) minimum gold in select area,
 - .00010" (0.0254mm) minimum tin / lead (90 / 10) in select area, over
 - .000050" (0.0013mm) minimum nickel plate overall.
- Other plating options are also available.

5.0 ELECTRICAL:

5.1 VOLTAGE:

30 VAC max.

5.2 CURRENT:

1.0 amp. per contact max. for three consecutive circuits max.

5.3 DIELECTRIC STRENGTH:

500 VRMS, per MIL-STD-202, Method 302 condition B.

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PS-73826-0000	CRITICAL = 0	MAJOR = 0	SCA2PS	9
ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP				



6.0 ENVIRONMENTAL:

6.1 OPERATING TEMPERATURE RANGE:

- 40 C to + 105 C.

6.2 RESISTANCE TO SOLDERING HEAT:

240 C for 15 sec. with no physical damage.

6.3 RESISTANCE TO CLEANING SOLVENTS:

Good resistance to water or alcohol based cleaners.

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ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP				



PRODUCT SPECIFICATION



LANGUAGE

ENGLISH

7.0 RELIABILITY TEST REQUIREMENTS:

<u>TEST</u>	<u>EIA#</u>	<u>CRITERIA</u>	<u>COMMENTS</u>
General Examination	364-18	Visual and dimensional inspection	No defects allowed that may impair normal operation
Mating force	364-13	Force to mate 1.08N, (110gf) maximum per contact	Measure the force to mate at a rate of 12.7 mm per minute max.
Durability and LLCR	364-23	Low level contact resistance ≤ 15 milliohm initial	20 mV max. open circuit at 100mA max.; measured at 0, 50, 250, and 500 cycles
Shock	364-27	Continuity ≤ 1 micro- second	30 G peak acceleration, half sine. 3 shocks along 3 perpendicular
Vibration	364-28	Continuity ≤ 1 micro-second. LLCR change ≤ 15 milliohms	15-500-15 Hz random, for 1 hr. in each of 3 mutually perpendicular planes.
Unmating force	354-13	Force to unmate 0.15N (15gf) minimum per contact	Measure the force to unmate at a rate of 12.7 mm per minute max.
Mixed Flowing Gas	364-65	No physical damage and shall meet all requirements of subsequent tests	Class II for 14 days mated. Includes compliant interface where applicable.
Temperature life	364-17	No physical damage and shall meet all requirements of subsequent tests	105 degrees C for 1000 hours

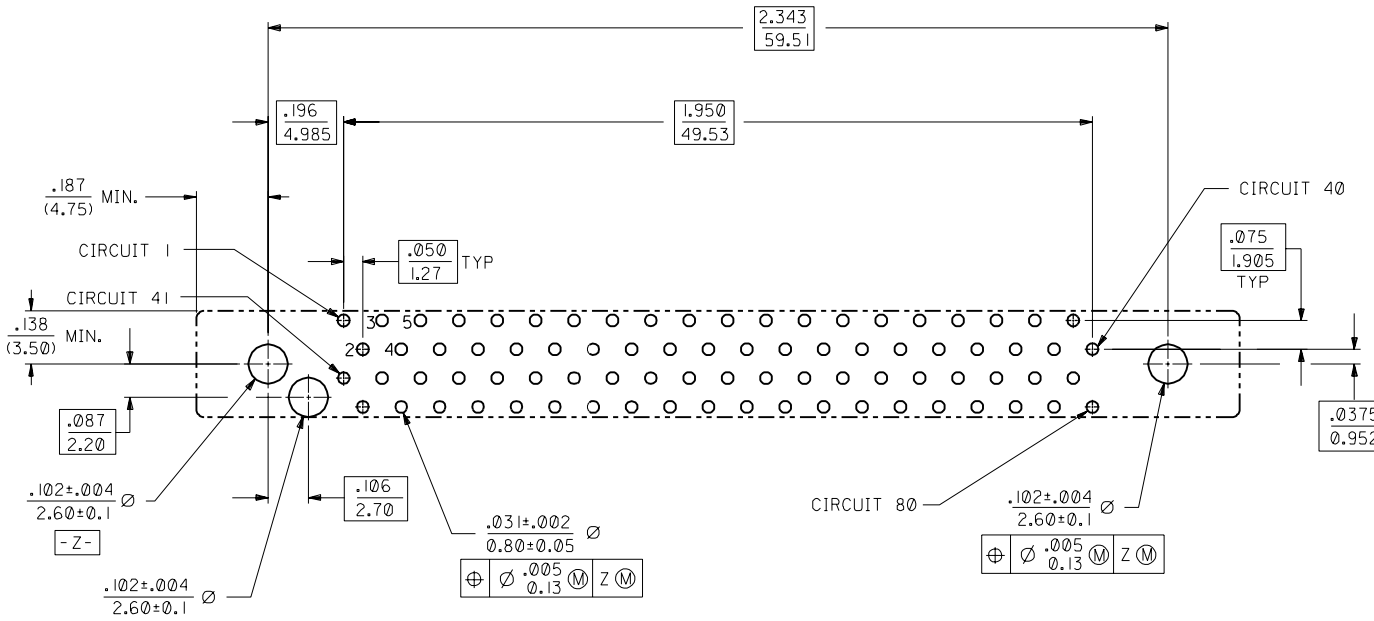
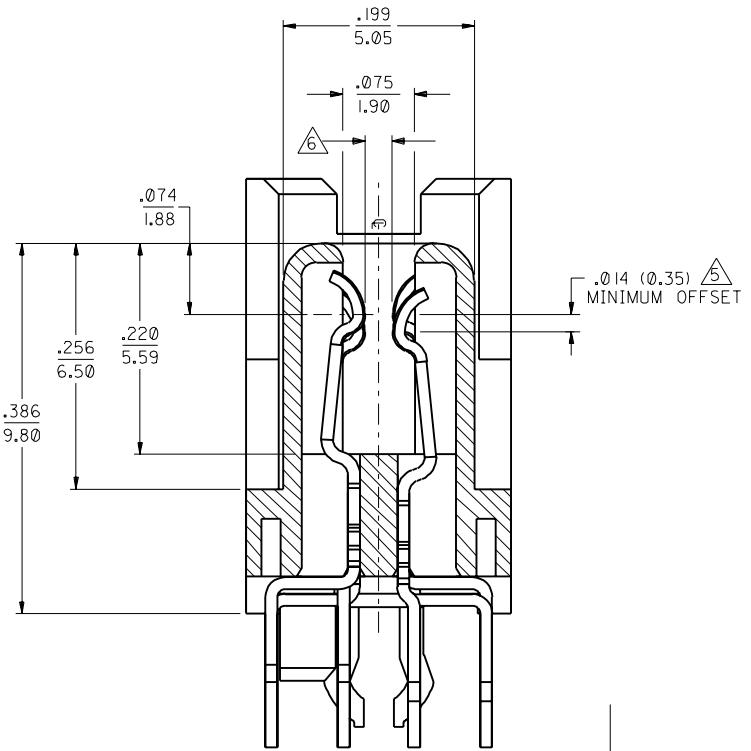
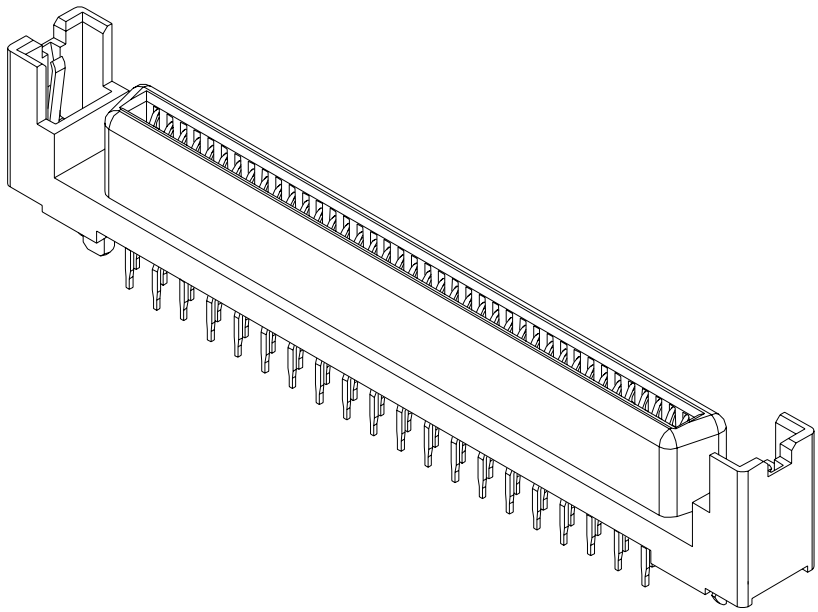
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ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP				



7.0 RELIABILITY TEST REQUIREMENTS: (CONTINUED)

TEST	EIA#	CRITERIA	COMMENTS
Thermal Shock	364-32	No physical damage and shall meet requirements of subsequent tests	5 cycles between -55 C and 105 C, mated connectors
Humidity - temperature cycling	364-31	No physical damage and shall meet requirements of subsequent tests	10 cycles between 25 C and 65 C, at 95% rh , 240 hrs. mated connectors.
Current vs. temperature rise	364-70	30 degree max. temperature rise	2A. max. for two voltage applied contact positions, 3A max. for 3 voltage applied contact positions
Insulation resistance	364-21	1000 megaohms min.	Test voltage 500 volt dc
Resistance to solvents	364-11	No defect or damage that would impair normal operations	Exposure to trichloroethylene
Compliant to PCB hole cycling	N/A	No fracture or break-out of PTH	Each set of PTH's are cycled 3 times using a new connector each cycle
Compliant to PCB insertion force	N/A	Maximum insertion force allowed is 15 lbs per circuit	Press connector to PCB, the force to seat should not exceed 15 lbs. / circuit
Compliant to PCB retention force	N/A	Minimum retention force of compliant to PCB allowed is 1.5 lbs. min per circuit	Removal of connector or contacts from PCB should yield a force > 1.5 lb./ contact

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ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP				



F2	SEE SHEET 1
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DIMENSIONS SHOWN (METRIC) INCH		MFG. SH. REV. LTR. REVISIONS	
UNLESS OTHERWISE SPECIFIED TOLERANCES ANGULAR ± 1/2°		REVISE ONLY ON CAD SYSTEM	
3 PLACE ± .005	INCH METRIC	TITLE SALES ASSEMBLY	
2 PLACE ± .01 ± 0.13		EBBI VERTICAL RECEPTACLE	
1 PLACE --- ± 0.25		80 CKT SCA-2 CONNECTOR	
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		FROM: MOLEX INCORPORATED SHEET NO. DATE	
		L15LEJLL 60532 U.S.A. 2 7/21/95	
PART NO. DRWG. NO.		SEE TABLE SDA-71743-108	
DRWG. BY: RAN	CHK'D BY: RAN	FILE NAME: S71743X8	
APP'D BY: GWF	SCALE: 4:1	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.	